

AD-756 806

REPAIR OF UNPAVED RUNWAY

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22 December 1972

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In Reply Refer to:
FSTC-HT-23. 2043-72
DIA Task No. T70-23-01

Date: 22 December 1972

TRANSLATION

ENGLISH TITLE: REPAIR OF UNPAVED RUNWAY

AD 756806

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REQUESTOR: AMXST/GE, Mr. Fisher

SOURCE: Aviatsiya i Kosmonavtika
No. 4, 1967, pp 60-61

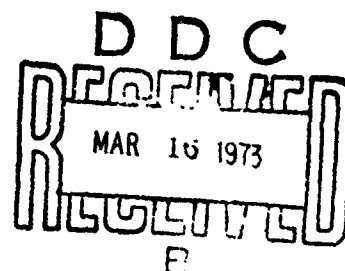
TRANSLATOR: ACSI, K-2598

LANGUAGE: Russian

COUNTRY: USSR

KEY WORDS:
airfield maintenance equipment
runway construction

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The landing field is destroyed as one uses unpaved airfields. The runway surface should be packed down and the tracks closed up. The latter operation is the most labor-consuming one, especially in cases in which the tracks' depth reaches 15 cm or more. The fact is, shallow tracks can be closed up while packing down the runway with heavy pneumatic rubber rollers. In the spring, when the ground's moisture content is high and the ground's original density is low, the surface is smoothed in two stages. First it is smoothed with light metal or pneumatic rubber rollers with a tire pressure of up to 2 kg/cm², and then it is smoothed with heavy ones.

But what about deep tracks? Repair of such a runway includes a number of independent, labor-consuming operations. Here one must find quarry earth from outside, leveling it out, packing it down and so forth. One also has to repair the sod cover. Usually powered graders are employed in closing deep tracks. But what is the economic effect here? The machine makes long passes when the volume of earth work is small. A lot of time is wasted on this and the powered grader is being used irrationally. One obtains work that is not of sufficiently high quality and the sod cover is damaged. As a result the runway is out of order for a long time.

But can't the repair time for unpaved fields be shortened? It can. We suggest employing a 2-bladed tractor mounted plow (developed by the authors of this article). It is mounted in place of the ordinary blade on a sprinkling-watering machine. The illustration presents a general view of the plow. It can be produced from existing parts.

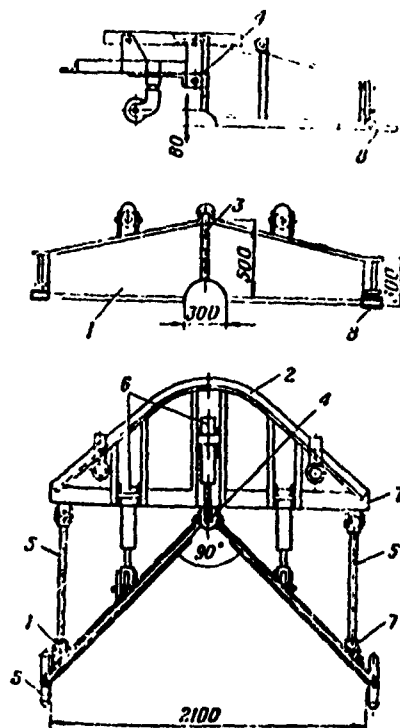


Illustration. General view of the 2-bladed plow.

Key: 1. blades; 2. supporting frame; 3. connecting hinge; 4. swing support; 5. rod; 6. shock absorbers; 7. rod hinges; 8. skis.

It can be seen from the illustration that the plow's blade 1 is attached to the supporting frame 2 by means of a swing support 4, two rods 5 and three (or one central) shock absorbers 6. The blades have semioval notches so that a roll of earth will be created above the tracks. Supporting skis 8 are attached to the outer ends of the blades. They slide along the surface and prevent the plow from embedding itself deeply in the ground. The plow is raised and lowered using a hydraulic system.

When producing the 2-bladed plow one can use a supporting frame, shock absorbers and a hydraulic system that make up the snow removing plow of the KPM type machine.

What operations can one carry out using the 2-bladed plow when repairing a runway? Earth that has been thrown and squeezed out is collected and returned to the track. Quarry earth that has been brought in is distributed uniformly, a roll being formed above the track.

Airplane tracks 8-12 cm in depth, formed on landing fields with a

degree of density of $K = 0.9-0.98$, can be closed up only by returning earth squeezed out of them and subsequently packing it with pneumatic rubber rollers.

In order to fill in tracks that have appeared in covers that have become unpacked, one must add some more earth and pack it to the required degree.

Experience has shown that closing deep tracks with the 2-bladed plow sharply improves the productivity and quality of work. Expenditures of time and resources on repairing damaged portions of the landing field are reduced two to three times when employing the plow. It is especially effective on airfields where intensive flying is carried out. The tractor-mounted, 2-bladed plow is easy to use, simple in design and can be produced by repair workshops.